



US 20140068573A1

(19) **United States**

(12) **Patent Application Publication**  
**Brewis et al.**

(10) **Pub. No.: US 2014/0068573 A1**  
(43) **Pub. Date: Mar. 6, 2014**

(54) **ERROR-CODE AND EXCEPTION-BASED  
FUNCTION DISPATCH TABLES**

(52) **U.S. Cl.**  
USPC ..... 717/140; 712/244

(75) Inventors: **Deon Brewis**, Redmond, WA (US);  
**James Springfield**, Woodinville, WA  
(US); **Sridhar S. Madhugiri**,  
Sammamish, WA (US)

(73) Assignee: **MICROSOFT CORPORATION**,  
Redmond, WA (US)

(21) Appl. No.: **13/596,303**

(22) Filed: **Aug. 28, 2012**

**Publication Classification**

(51) **Int. Cl.**  
**G06F 9/45** (2006.01)  
**G06F 9/44** (2006.01)

(57) **ABSTRACT**

A condition detected by a virtual routine may be treated by setting an error code or raising an exception, depending on circumstances. Enhanced vtable layouts promote availability of both error-ID-based and exception-based virtual routines, while maintaining compatibility. Compilers treat virtual routines based on their circumstances. One enhanced vtable includes error-ID-based routine pointers in a COM-layout-compatible portion and exception-based routine pointers in an extension. For a virtual routine not overridden by a derived class, a compiler generates a direct call. For an object instance of a specific type, the compiler generates a direct exception-based call for the object's routine. For a factory-sourced object's routine, the compiler generates a virtual exception-based call. When the virtual routine belongs to a component having an enhanced vtable, the compiler may generate a virtual call using the exception-based routine pointer. Code wrappers between COM and native format may also be used.

